

Claims

- [c1] What is claimed is:
1. A data recovery circuit for generating an output signal that is synchronized with an input signal; the data recovery circuit comprising:
 - a charge pump for generating a charging current according to a phase difference between the input signal and the output signal;
 - a first filter electrically connected to the charge pump for generating an output voltage corresponding to the charging current;
 - an oscillator for adjusting a phase or frequency of the output signal according to a voltage;
 - a switch circuit electrically connected between the first filter and the oscillator for controlling the electrical connection between the first filter and the oscillator; and
 - a second filter electrically connected between the switch circuit and the oscillator for adjusting the output voltage of the first filter;wherein when the charge pump is operating, the switch circuit disconnects the first filter from the oscillator, and when the charge pump stops operating, the switch circuit connects the first filter and the oscillator such that the oscillator adjusts the frequency or phase of the output signal according to the output voltage of the first filter.
- [c2] 2. The data recovery circuit of claim 1 wherein the second filter comprises at least a second capacitor; when the switch circuit connects the first filter and the oscillator, the second capacitor is charged or discharged by the output voltage of the first filter so as to change a waveform of the output voltage.
- [c3] 3. The data recovery circuit of claim 2 wherein the first filter comprises at least a first capacitor, and the charging current charges or discharges the first capacitor for changing the output voltage of the first filter.
- [c4] 4. A data recovery method for generating an output signal that is synchronized with an input signal;
- the method comprising:
- generating a charging current according to a phase difference between the

input signal and the output signal;
generating an output voltage according to the charging current; and
adjusting a frequency or phase of the output signal only after a waveform of the
output voltage has been stable.

- [c5] 5. The data recovery method of claim 4 wherein the output voltage is generated
from charging or discharging a filter by the charging current.

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